<u>Claims</u>

1. A monitoring device for a harvesting machine wherein harvested crop material is processed and flows through the harvesting machine having at least one sensor that is designed for generating a signal containing information on the noises caused by harvested crop material passing through the harvesting machine, wherein the sensor is arranged outside of the flow of harvested crop material.

2. A monitoring device as defined by claim 1 wherein the harvesting machine has an operator's cab, the operator's cab is provided with a sound reproduction device, the sound reproduction device is able to acoustically reproduce signals derived by the sensor.

3. A monitoring device as defined by claim 2 wherein the sound reproduction device receives a signal that is derived from the signal of the sensor.

4. A monitoring device as defined by claim 2 wherein the sound reproduction device receives a filtered signal that is derived from the signal of the sensor.

5. A monitoring device as defined by claim 2 wherein the sound reproduction device receives a signal derived from the signal of the sensor that is superimposed with a comparative value of a signal.

6. A monitoring device as defined by claim 2 wherein a computer receives the signal of the sensor and is, based on the signal delivered by the sensor able to generate a value that is displayed on a visual display device.

7. A monitoring device as defined by claim 6 wherein the computer generates a control signal that is fed to an adjustable element of the harvesting machine.

8. A monitoring device as defined by claim 2 wherein a computer receives the signal of the sensor and is, based on the signal delivered by the sensor able to generate a control signal that is fed to an adjustable element of the harvesting machine.

9. A monitoring device as defined by claim 2 wherein a computer receives the signal from the sensor, the signal of the sensor is processed together with a comparative value of a correctly operating harvesting machine.

10. A monitoring device as defined by claim 9 wherein the comparative value is specifically selected for each respective type of crop being harvested.

11. A monitoring device as defined by claim 2 wherein a computer receives the signal from the sensor, the signal of the sensor is processed together with a comparative value of a defectively operating harvesting machine.

12. A monitoring device as defined by claim 11 wherein the comparative value is specifically selected for each respective type of crop being harvested.

13. A monitoring device as defined by claim 2 wherein the signal of the sensor also contains information on the movement of an element of the harvesting machine.

14. A monitoring device as defined by claim 13 wherein the signal of the sensor also contains information on the noises caused by the element of the harvesting machine.

15. A monitoring device as defined by claim 2 wherein the signal of the sensor also contains information on the noises caused by the element of the harvesting machine.

16. A monitoring device as defined by claim 2 wherein the sensor is designed for sensing noises caused by working elements that engage the flow of harvested crop material.

17. A monitoring device as defined by claim 16 wherein the sensor acts as a crop flow sensor.

18. A monitoring device as defined by claim 16 wherein the sensor comprises an acoustic sensor.

19. A monitoring device as defined by claim 18 wherein the sensor is designed for sensing structure-borne noise.

20. A monitoring device as defined by claim 9 wherein the comparative values are sensed by the sensor and can be stored by the computer.

21. A monitoring device as defined by claim 11 wherein the comparative values are sensed by the sensor and can be stored by the computer.

22. A harvesting machine for harvesting and processing an agricultural crop, the harvesting machine comprising:

a frame;

wheels supporting the frame;

a harvesting assembly for harvesting an agricultural crop;

a crop processing assembly for processing a harvested crop material, the harvested crop material forming a flow of harvested crop material through the crop processing unit as it is being processed;

an operator's cab from which the harvesting machine is controlled;

a monitoring device having at least one sensor that is designed for generating a signal containing information on the noises caused by the harvested crop material as it is processed by the crop processing assembly, the sensor being arranged outside of the flow of the harvested crop material.